

**Notice of Allowability**

Application No.

10/080,537

Examiner

Michael P. Stafira

Applicant(s)

INOUE ET AL.

Art Unit

2877

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE Filed 6/21/2004.
2. ☒ The allowed claim(s) is/are 1-31.
3. ☒ The drawings filed on 25 February 2002 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

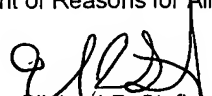
\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 6/21/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
Michael P. Stafira  
Primary Examiner  
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## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Allowable Subject Matter***

2. Claims 1-31 are allowed over the prior art of record.
3. The following is an examiner's statement of reasons for allowance:

Regarding claims 1, the prior art fails to disclose or make obvious a wave-front aberration measuring method having the steps of measuring aberration components of a first set of orders out of a plurality of aberration components obtained by expanding the wave-front aberration of the optical system using a predetermined basis and calculating correction information for aberration components of a second set of orders, based on aberration components of predetermined orders out of the measured aberration components of the first set of orders, and in combination with the other recited limitations of claims 1. Claims 2-7 are allowed by the virtue of dependency on the allowed claims 1.

Regarding claim 8, the prior art fails to disclose or make obvious a wave-front aberration measuring apparatus which measures a wave-front aberration of an optical system having a storage unit that stores correction information for aberration components of a second set of orders, the correction information being calculated based on aberration components of predetermined orders out of aberration components of a first set of orders out of a plurality of

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aberration components obtained by expanding the wave-front aberration of the optical system using a predetermined basis, and in combination with the other recited limitations of claim 8.

Claims 9-15 are allowed by the virtue of dependency on the allowed claim 8.

Regarding claim 16, the prior art fails to disclose or make obvious a wave-front aberration measuring method with which to measure wave-front aberration of a projection optical system that projects a pattern onto a substrate having the steps of measuring aberration components of a second set of orders out of aberration components of a first set of orders included in wave-front aberration of said projection optical system; and correcting said measured aberration components of said second set of orders, based on predetermined orders that are included in aberration components of said first set of orders and not included in aberration components of said second set of orders, and in combination with the other recited limitations of claim 16. Claims 17-23 are allowed by the virtue of dependency on the allowed claim 16.


Regarding claim 24, the prior art fails to disclose or make obvious a wave-front aberration measuring apparatus which measures wave-front aberration of a projection optical system that projects a pattern onto a substrate having a measuring system arranged in said projection optical system, which measures aberration components of a second set of orders out of aberration components of a first set of orders included in wave-front aberration of said projection optical system; and a correcting unit coupled to said measuring system, which corrects said measured aberration components of second set of orders, based on predetermined orders that are included in aberration components of said first set of orders and not included in aberration components of said second set of orders, and in combination with the other recited limitations of claim 24. Claims 25-31 are allowed by the virtue of dependency on the allowed claim 24.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on 571-272-2059. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Michael P. Stafira  
Primary Examiner  
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August 2, 2004